This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of claims:**

1. (Currently Amended) A neural-stimulation method comprising:

providing neural stimulation having a plurality of stimulation parameters including a stimulation amplitude, a stimulation frequency, a stimulation pulse duration, an electrode-firing pattern, and a set of one or more electrode-polarity-firing conditions;

pseudo-randomly varying at least a first of the stimulation parameters; and

changing a value of a second of the stimulation parameters based upon having pseudo-randomly varied the first stimulation parameter and based upon a predetermined relationship that specifies how changes in the first parameter affect desirable values for the second parameter.

2. (Original) The neural-stimulation method of claim 1, wherein the predetermined relationship is substantially similar to a strength-duration curve for neural excitation.

3. (Original) The neural-stimulation method of claim 2, further comprising:

measuring the strength-duration curve for neural excitation for at least one of a patient's neurons.

4. (Original) The neural-stimulation method of claim 3, wherein measuring the strength-duration curve for neural excitation for the patient's neurons comprises:

measuring a plurality of stimulation-amplitude values at a corresponding plurality of stimulation-pulse durations and observing whether a desired clinical outcome is achieved.

5. (Currently Amended) A neural-stimulation method comprising:

measuring a strength-duration curve for neural excitation for at least one of a patient's neurons, the measuring of the strength-duration curve including measuring a plurality of stimulation-amplitude values at a corresponding plurality of stimulation-pulse durations and observing whether a desired clinical outcome is achieved, the desired clinical outcome including the reduction of tremor via thalamic stimulation;

providing neural stimulation having a plurality of stimulation parameters including a stimulation amplitude, a stimulation frequency, a stimulation pulse duration, an electrode-firing pattern, and a set of one or more electrode-polarity-firing conditions;

pseudo-randomly varying at least a first of the stimulation parameters; and

changing a value of a second of the stimulation parameters based upon having pseudo-randomly varied the first stimulation parameter and based upon a predetermined relationship that specifies how changes in the first parameter affect desirable values for the second parameter, the predetermined relationship substantially similar to the strength-duration curve for neural excitation.

6. (Currently Amended) The neural-stimulation method of claim 1, further comprising:

varying the first stimulation parameter to produce a neuron-firing pattern, the ~~producing a~~ neuron-firing pattern having a plurality of different interspike intervals measured either over an interspike-measurement duration or over a plurality of spikes.

7. (Currently Amended) The neural-stimulation method of claim 6, wherein ~~varying the first stimulation parameter to produce a~~ the neuron-firing pattern ~~having a plurality of different interspike intervals comprises:~~

~~varying the first stimulation parameter to produce a plurality of neuron firing patterns~~ is selected from the group consisting of: a substantially-normal-distribution neural-firing pattern, a skew-left-distribution neural-firing pattern, a skew-right-distribution neural-firing pattern, and a bimodal-bursting-distribution neural-firing pattern.

8. (Original) The neural-stimulation method of claim 1, wherein at least one of the one or more electrode-polarity-firing conditions is selected from the group consisting of: anode, cathode, and off.

9. (Original) The neural-stimulation method of claim 1, wherein pseudo-randomly varying or changing the set of one or more electrode-polarity-firing conditions changes a spatial pattern of neurons affected by the neural stimulation.

10. (Currently Amended) A deep brain neural-stimulation method comprising:

providing deep brain neural stimulation having a plurality of stimulation parameters including a stimulation amplitude, a stimulation frequency, a stimulation pulse duration, an electrode-firing pattern, and a set of one or more electrode-polarity-firing conditions;

pseudo-randomly varying at least a first of the stimulation parameters; and

changing a value of a second of the stimulation parameters based upon having pseudo-randomly varied the first stimulation parameter and based upon a predetermined relationship that specifies how changes in the first parameter affect desirable values for the second parameter.

11. (Currently Amended) The deep brain neural-stimulation method of claim 10 in which the step of varying at least a first of the stimulation parameters includes pseudo-randomly varying at least a first of the stimulation parameters within a predetermined range of values.

12. (Currently Amended) The deep brain neural-stimulation method of claim 10 in which the step of varying at least a first of the stimulation parameters includes varying at least a first of the stimulation parameters sufficiently to avoid development of physiological tolerance to the neural-stimulation.

13. (Currently Amended) A neural-stimulation device comprising:

means for providing neural stimulation having a plurality of stimulation parameters including a stimulation amplitude, a stimulation frequency, a stimulation pulse duration, an electrode-firing pattern, and a set of one or more electrode-polarity-firing conditions;

means for pseudo-randomly varying at least a first of the stimulation parameters; and

means for changing a value of a second of the stimulation parameters based upon having pseudo-randomly varied the first stimulation parameter and based upon a predetermined relationship that specifies how changes in the first parameter affect desirable values for the second parameter.

14. (Canceled).

15. (Currently Amended) The neural-stimulation device of claim 13[4] in which the means for pseudo-randomly varying at least the first of the stimulation parameters varies at least the first stimulation parameter within a predetermined range.

16. (Currently Amended) The neural-stimulation device of claim 13[4] in which:

the means for providing neural stimulation includes an implantable pulse generator and a lead having at least one electrode operatively coupled with the implantable pulse generator;

the means for varying at least a first of the stimulation parameters is implemented in software operatively associated with the implantable pulse generator; and

the means for changing a value of a second of the stimulation parameters based upon having pseudo-randomly varied the first stimulation parameter and based upon a predetermined relationship that specifies how changes in the first parameter affect desirable values for the second parameter parameters is implemented in software operatively associated with the implantable pulse generator.

17. (Currently Amended) The neural-stimulation device of claim 13[4] in which the means for providing neural stimulation includes a pulse generator and a lead having at least one electrode operatively coupled with the pulse generator.

18. (Currently Amended) A neural-stimulation system comprising:

at least one neural-stimulation lead, wherein at least one of the leads has at least one neural-stimulation electrode; and

a neural-stimulation device operatively coupled to the at least one neural-stimulation lead, wherein the neural-stimulation device

provides neural stimulation having a plurality of stimulation parameters including a stimulation amplitude, a stimulation frequency, a stimulation pulse duration, an electrode-firing pattern, and a set of one or more electrode-polarity-firing conditions,

varies at least a first of the stimulation parameters, and

changes a value of a second of the stimulation parameters based upon having varied the first stimulation parameter and based upon a predetermined relationship that

specifies how changes in the first parameter affect desirable values for the second parameter.

19. (Original) The neural-stimulation system of claim 18 in which the neural-stimulation device pseudo-randomly varies at least the first of the stimulation parameters.

20. (Original) The neural-stimulation system of claim 19 in which the neural-stimulation device pseudo-randomly varies at least the first of the stimulation parameters within a predetermined range.

21. (Original) A computer-readable medium having computer executable instructions for causing a neural-stimulation device to perform the steps recited in claim 10.

22. (Original) A computer-readable medium having computer executable instructions for causing a neural-stimulation device to perform the steps recited in claim 11.

23. (Original) A computer-readable medium having computer executable instructions for causing a neural-stimulation device to perform the steps recited in claim 12.